

1. AGENCY USE ONLY (Leave blank)

3. REPORT TYPE AND DATES COVERED
MONOGRAPH

5. FUNDING NUMBERS

6. AUTHOR(S)

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)

8. PERFORMING ORGANIZATION
REPORT NUMBER

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)

10. SPONSORING / MONITORING AGENCY REPORT NUMBER	
---	--

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION / AVAILABILITY STATEMENT

12b. DISTRIBUTION CODE

13. ABSTRACT (Maximum 200 words)

19971106118

14. SUBJECT TERMS

15. NUMBER OF PAGES

16. PRICE CODE

17. SECURITY CLASSIFICATION
OF REPORT
UNCLASSIFIED

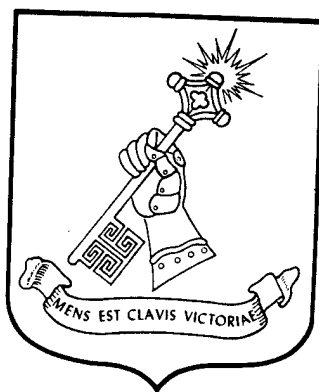
18. SECURITY CLASSIFICATION
OF THIS PAGE
UNCLASSIFIED

19. SECURITY CLASSIFICATION
OF ABSTRACT
UNCLASSIFIED

20. LIMITATION OF ABSTRACT
UNLIMITED

THE PRINCIPLES OF ...? ASSESSMENT OF FM 100-5'S PRINCIPLES OF-- OPERATIONS

**A MONOGRAPH
BY
Major Mark R. Forman
Infantry**



19971106 118

**School of Advanced Military Studies
United States Army Command and General Staff
College
Fort Leavenworth, Kansas**

SECOND TERM AY 96-97

Approved for Public Release Distribution is Unlimited

EXCEL QUALITY DESIGNED 8

SCHOOL OF ADVANCED MILITARY STUDIES

MONOGRAPH APPROVAL

Major Mark R. Forman

Title of Monograph: *The Principles of . . .? Assessment of
FM 100-5's Principles of--Operations*

Approved by:

Martin M. Robeson Monograph Director
LTCOL Mastin M. Robeson, MMAS

Danny M. Davis Director, School of
COL Danny M. Davis, MA, MMAS Advanced Military
Studies

Philip J. Brookes Director, Graduate
Philip J. Brookes, Ph.D. Degree Program

Accepted this 22d Day of May 1997

ABSTRACT

THE PRINCIPLES OF...? ASSESSMENT OF FM 100-5'S PRICIPLES OF--
OPERATIONS. By MAJ Mark Forman, USA, 42 pages.

Changing doctrine to keep pace with the evolving world situation is imperative. The U.S. Army is updating its operational doctrine by rewriting FM 100-5 *Operations*. The authors of the new doctrine have attempted to balance necessary change and change that the Army will accept. One of the most interesting changes is the revision of the U.S. Army's principles of war. Renamed the principles of *operations*, the meaning of the nine principles of war is expanded to provide a more holistic definition that includes OOTW.

The paper examines the revisions by first reviewing prominent military theorists' views about principles, axioms and rules of war, and then describing the evolution of the U.S. Army's doctrine. The principles of morale and exploitation are completely new to U.S. Army doctrine and are therefore closely scrutinized in the discussion.

Comparison of the U.S. Army's proposed principles of *operations* and joint principles of war reveals that the Army conforms and improves upon the higher joint doctrine. The incorporation of the OOTW principles into the principles of *operations* is a common sense reduction that improves decision making.

Joint doctrine is still emerging and the Army provides a viable example for all to follow. Maintaining a common body of doctrine, throughout the Department of Defense, is necessary and important for effective future Joint operations. As the Army conducts routine doctrine revisions, staying abreast with the evolving nature of warfare continues to challenge and change the principles on which doctrine rests. On the eve of the next century, the newly published principles of *operations* will provide the flexible framework for thought required to address those challenges.

TABLE OF CONTENTS

Chapter I - Introduction.....	1
Chapter II - Historical Review.....	6
- Review Of Military Theorists Principles.....	6
- Evolution Of The U.S. Army Principles Of War	10
Chapter III - Changes Illustrated.....	12
- Comparison Of The Old Principles Of War and The New Principles Of Operations.....	12
- The New Principles - Morale and Exploitation.....	21
- The Missing Principles Of OOTW.....	29
Chapter IV - Sister Service And Joint Doctrine Review.....	33
Chapter V - Conclusion, Assessment And Recommendations.....	35
Appendix A- Maps	
Enclosure 1- Grant's Final Campaign Against Vicksburg.....	A-1
Enclosure 2- Battle Of Champion Hill.....	A-2
Enclosure 3- Falaise Pocket, August 16-19.....	A-3
Enclosure 4- Closing The Falaise Pocket, August 19-20.....	A-4
Enclosure 5- July 1, 1863, Afternoon.....	A-5
Endnotes.....	43
Bibliography	

Chapter I: Introduction

In a quest to remain relevant and credible as a world power, the United States (U.S.) military must evolve and adapt to a changing world environment. Doctrine is a cornerstone to the combat readiness of the U.S. military. Changing doctrine to keep pace with the evolving world situation is imperative. The 1993 edition of Field Manual (FM) 100-5 states, "the army's doctrine lies at the heart of its professional competence. It is the authoritative guide to how army forces fight wars and conduct operations other than war (OOTW)."¹

The U.S. Army is updating its operational doctrine by rewriting FM 100-5 *Operations*. The authors of the new doctrine have attempted to balance necessary change and change that the Army will accept. One of the most interesting changes is the revision of the U.S. Army's principles of war. The principles, depicted as part of Figure 1, were originally set forth in War Department Training Regulation 10-5, in 1921.

PRINCIPLES			
Principles Of War		Principles Of Operations Other Than War	Principles Of Operations
1921: Objective Offensive Mass Economy of Force Movement Surprise Security Simplicity Cooperation	1996: Objective Offensive Mass Economy of Force Maneuver Surprise Security Simplicity Unity Of Command	Objective Unity Of Effort Security Restraint Perseverance Legitimacy	Objective Offensive Maneuver Massed Effects Economy Of Force Simplicity Surprise Unity Of Effort Exploitation Security Morale FM 100-5 (Coord Draft),1997
TR 10-5,1921	FM 100-5, 1993	FM 100-23, 1994	

FIGURE 1

Minor changes, over the past 75 years, are evidence of the enduring merit of the Army's original list. The authors of the revised FM 100-5 propose combining the principles of war and the principles of OOTW as shown in Figure 1. The combined list is renamed the principles of *operations*. Combination of the two lists reduces the total number of principles from 15 to 11. The list is not prioritized, and the user is cautioned not to view them independent of one another. Principles are best used as a collective whole. This monograph examines the development, evolution and validity of the revised principles.

The military's use of the term "principle" is different than a true scientific principle. Military principles are not immutable and do not describe universal rules applying to all situations. A scientific principle, such as the law of gravity, describes a cause and effect relationship that does not change. Webster's Dictionary defines scientific method as, "principles and procedures for the systematic pursuit of knowledge involving the recognition and formulation of a problem, the collection of data through observation and experiment and the formulation and testing of hypotheses."² Armies develop principles of war using a partially "scientific method." They glean from history, experience and observation of military operations, trends and lessons which may apply in the future. Military operations, during war or OOTW, are not easily reduced to universal relationships between causes and effect. The reason for this difficulty is the fact that war and all military operations are unique human endeavors. Principles of war provide a common foundation that can be used to explain and analyze past events. Thus, military operations are viewed as a combination of both art and science.

Military principles are more thoughtfully regarded as “guides to conduct” based on the acquired knowledge of past theorists, practitioners and historians. John Keegan, a noted military historian, stressed this aspect by saying, “the apparent ability of the principles to guide men in war through its barrage of physical pressures and maze of alternative choices has given them [the principles] a strong and understanding appeal.”³

Applying the principles of war must be based on the situation at hand. Choosing the right principles to emphasize in planning and execution should be tempered by sound military judgement. The guides to conduct embodied in the principles of war have been practiced through the ages. Military professionals from all services and most nationalities adhere to, or at least profess, the use of principles (Figure 2).

PRINCIPLES OF WAR					
U.S. Armed Forces Principles Of War			*Great Britain & Australia:	*France:	*People's Republic Of China:
*Air Force:	Army, Special Operations, Navy & Joint Doctrine:	USMC:	Selection & Maintenance Of The Aim	Concentration Of Effort Surprise Liberty Of Action	Political Mobilization Selection & Maintenance Of The Aim
Objective	Objective	Combat Power	Offensive Action		Offensive
Offensive	Offensive	Concentration	Concentration Of		Action
Mass	Mass	& Speed	Force		Initiative or
Economy of	Economy of	Surprise &	Economy Of		Flexibility
Force	Force	Boldness	Force		Coordination
Maneuver	Maneuver	Exploit	Flexibility		Security
Unity Of Cmd	Surprise	Vulnerability	Cooperation		Surprise
Security	Security	& Opportunity	Security		Morale
Surprise	Simplicity		Surprise		Freedom Of
Simplicity	Unity Of Command		Maintenance Of		Action
>Timing & Tempo	FM100-5, USSOCOM Pub 1, NDP 1,	FMFM1	Administration		Mobility
>Logistics	Joint Pub 1				
>Cohesion					

* - Armed Forces Staff College Pub 1, p 1-5
 > - AF Manual 1-1, March 1992 No Longer Includes
 The Three Last Principles

FIGURE 2

The current set of United States Army principles of war have stood the test of time and now carry the weight of custom behind them. However, the Army's principles of war are not cast in stone. The famous military theorist, Carl von Clausewitz, once summarized this well, "no prescriptive formulation universal enough to deserve the name of law can be applied to the constant change and diversity of the phenomena of war."⁴ Revelation of additional insights into military operations may provide new principles. Many military personnel learned the principles of war by rote memorization early in their careers, gaining on application understanding through experience. Principles often evolve through the discovery of additional facts or knowledge. Review of selected military theorists, other nations, sister service and joint doctrine provide a greater understanding of the principles. The evolutionary nature of the principles allows doctrine developers the latitude to adjust and adapt, yet critical analysis of the rationale behind changes may reveal unnecessary modification.

New technology may drive changes in doctrine. The advent of the atomic bomb was thought to have rendered many of the principles of war obsolete. For example, in 1959 a faculty member at the Command and General Staff College wrote, "the changing tactics of the battlefield of tomorrow--due to the use or threat of use of nuclear weapons--require a reevaluation and re-examination of the principles of war as they apply to future warfare."⁵ His article in *Military Review* postulated that many of the contemporary applications of the principles of war no longer applied. Assertions such as, the assignment of geographical objectives to divisions and corps is undesirable because atomic weapons would destroy these massed formations were questionable.

Critics note that the French followed a blind obedience to their offensive doctrine in World War I. General Foch failed to realize the devastating effects of the machine-gun, artillery and concertina wire on dismounted infantryman moving between trench-lines. In this case, technological advancement required adjustments in tactical doctrine. The principle of offensive's application at the operational and strategic levels of war may still have had value and validity for the French Army.

Generals' like Foch, use principles of war for various reasons. The foremost reason is to aid them in conceptualizing operations and military endeavors. The purpose for including principles in operational doctrine is threefold. First, they simplify decision making in a complex environment. Keegan notes, "one of the purposes behind the principles has been to make new and strange circumstances comprehensible, to draw a thread from one war to another, to force events into a mold and to make conflicts obey the dramatic unities."⁶ Second, they provide a framework for analysis of military operations planning and in retrospect, execution. Finally, the principles provide a set of military planning interrogatives--questions to be considered at the tactical, operational and strategic levels of warfare.

In summary, U.S. Army doctrine is being revised to meet a changing world situation. The principles of war, now referred to as principles of *operations*, are evolving to keep pace with the demands of the twenty-first century. This monograph examines the rationale for changing the existing principles and questions the logic of combining the principles of distinct operations into one set.

Chapter II - Historical Review

Review Of Military Theorists Principles

Reviewing prominent military theorists views and opinions about principles, axioms, rules or laws of war is insightful and informative. Two theorists developed their works based on the actions, thoughts and example of France's Napoleon Bonaparte. Napoleon frequently spoke of his principles of war and occasionally wrote about them, however he never published them.⁷ Baron Antoine-Henri Jomini and Major General Carl von Clausewitz gathered different insights from the same master. The U.S. Army's theoretical background is founded on the writings of these two men.

War in the Napoleonic Era is in many ways different from warfare today. However, many of the essential elements of modern warfare remain strikingly the same as Napoleon's. This warrants attention to the context of the writings that set the foundation of U.S. military theory.

European monarchs set out to break the momentum of the French revolution and stop the spread of popular revolt throughout Europe. Consequentially, France's motivation to resist, fight and emerge victorious became so impassioned that a new form of warfare evolved. France's very survival was at the heart of the struggle, necessitating the call to arms of the entire nation. The fervor that expelled the armies of Russia, Austria and Prussia from France's soil, carried over to the French attacks against the enemy's homelands. Gaining control of surrounding continental adversaries assured France's security and ultimate survival.

Napoleon's success in the War of the Third Coalition in 1805 and sweeping victories at Ulm and Austerlitz inspired him to excessive conquest. The continuous battles and campaigns waged against other European powers from 1807-1814 resulted in few successes (Austria, 1809; Italy, 1806, etc.,) and many defeats (Trafalgar, 1805; Baylen, 1808, Battle of Victoria, 1813; Pyrenees, 1814; etc.,).⁸ Napoleon's grand strategy for the campaign of 1812 against Russia was to attack the Russian armies without warning. Following this strategic surprise, Napoleon's Grand Army would divide and defeat them sequentially by rapid forced marches and overwhelming manpower in a decisive battle. This accomplished, Napoleon would march to Moscow, dictate the terms of surrender from the Kremlin and secure the victory. On 24 June 1812, without a preliminary declaration of war, the Grand Army of 633,000 men crossed the Neman.⁹

A summary of the Russian campaign provides a reasonable glimpse into Napoleon's methods for successful warfare. Russian armies were beaten back into the interior of their nation by unceasing forced marches of unprecedented speed. Napoleon attained a decisive engagement at Borodino and inflicted approximately 40,000 Russian casualties to the French 30,000. This figure represented about one-third of the total engaged.¹⁰ Napoleon entered Moscow eight days later. The successful prosecution of war demonstrated at Austerlitz and Ulm, had once again proven successful on the plains of Russia. Although, the French Army is subsequently forced to retreat and ultimately the French empire collapsed, the success on these battlefields provided the observers an intriguing recipe for victory.

Key to Napoleon's victories was the wanton expenditure of human life. Imposing even greater casualties on his adversaries, he forced them to capitulate. Battles of annihilation, reflected in both Jomini's and Clausewitz's writing, were embellished by advances in artillery, innovations in organization and novel command methods. Strategy called for mustering the most forces, and organizing and maneuvering them and their firepower to the decisive battle at an unexpected time or place.

Jomini, claimed that the principles of war should be treated as rules for the conduct of warfare, by applying the principles with greater flexibility. Clausewitz differed. He viewed the principles as a combination of notions with a core of truth, but that they were not powerful enough to be as obligating as a law. Jomini listed several immutable principles, embraced in the following maxims:

- To throw by strategic movements the mass of an army, successively, upon the decisive points of a theater of war, and also upon the communications of the enemy as much as possible without compromising one's own [mass/maneuver/security].
- To maneuver to engage fractions of the hostile army with the bulk of one's own forces [maneuver/offensive/mass].
- On the battlefield, to throw the mass of the forces upon the decisive point, or upon that portion of the hostile line which it is of the first importance to overthrow [mass/economy of force].
- To so arrange that these masses shall not only be thrown upon the decisive point, but that they shall engage at the proper times and with ample energy [objective/maneuver].¹¹

The maxims were presented as the keys to victory. The general who most closely followed the wisdom contained in these passages was assured success in Napoleonic fashion. Clausewitz presented a much deeper view to similar thoughts:

The first principle is that the ultimate substance of enemy strength must be traced back to the fewest possible sources, and ideally to one alone [objective]. The attack on these sources must be compressed into the fewest possible actions--again, ideally, into one. Finally all minor actions must be subordinated as much as possible [economy of force].

In short the first principle is: *act with the utmost concentration* [mass].

The second principle is: *act with the utmost speed* [maneuver/offensive]. No halt or detour must be permitted without good cause [exploitation]. The task of reducing the sources of enemy strength to a single center of gravity will depend on:

--The distribution of the enemy's political power...

--The situation in the theater of war where the various armies are operating...

The principle of aiming everything at the enemy's center of gravity admits of only one exception--that is, when secondary operations look exceptionally rewarding.

But we must repeat that only decisive superiority can justify diverting strength without risking too much in the principle theater [economy of force].¹²

Clausewitz emphasizes engaging the enemy's center of gravity, his main force.

Corresponding modern principles of war are annotated with

brackets [], to paraphrase the principles each theorist contributed. The bulk of their principles remain viable in today's warfare.

Professor Bernard Brodie, a modern military theorist, reacted vehemently against codifying principles of war into short maxims. He expressed this in a speech delivered in 1957:

I should like now to return to Clausewitz just for a moment, in order to consider the origin of the so-called "principles of war," the original elucidation of which is frequently attributed to him. It is true that most of what we presently call "principles of war," are to be found revealed and developed in that great book of his entitled "*vom Kriege*," or *On War*. Yet in that book he specifically denied that there were any such things as rules or principles, a denial for which his contemporary, Jomini, took him severely to task. What Clausewitz meant was that the ideas about the conduct of war that he was trying to develop and elucidate could not be reduced to a few simple and tersely-expressed rules.¹³

Brodie's contempt for the principles of war as a crutch for military thinkers to lean on, is repeated in a later work, *Strategy in the Missile Age*. He cites the frequent misuse of a

codified body of ideas. In his lifetime, he expresses concern that millions of lives have been sacrificed and great battles have been organized and fought in the name of these principles. In Brodie's opinion, "the so-called 'principles of war' are usually presented in lists of some seven to eleven numbered maxims. They are supposedly unchanging despite fantastic changes that have occurred in almost all factors for which they deal."¹⁴ Brodie emphatically states that ideas with such durability are generally characteristic of divine revelation or definitions too broad to be meaningful.

Evolution Of The U.S. Army Principles Of War

The American Army seized upon Jomini's Napoleon for its foundation of military tactics and strategy. Clausewitz was initially overlooked because his works were not translated into English until 1873. The U.S. Army first adopted the principles of war in the 1921 version of Training Regulation 10-5, *Doctrines, Principles and Methods*¹⁵. United States Army principles have distant lineage to the principles of war expressed by Jomini in *The Art of War*. The more recent historical founder of the notions contained in the U.S. Army doctrine is Major General J.F.C. Fuller.

Fuller, an original military thinker of the Twentieth Century, organized the first British armored corps in World War I and developed tank warfare strategy and tactics. He used the principles of war in an attempt to explain and understand the failures of British campaigns during World War I, 1914-1915.¹⁶ Fuller, along with another post World War I military theorist, Basil H. Liddell Hart, initially published a list of eight principles of war in *The Reformation of War*.¹⁷ In 1926, Fuller added a ninth principle of war, economy of force to his list of eight others: objective, offensive, mass, economy of

force, movement, surprise, security, and cooperation.¹⁸ In 1921, two disciples of Fuller's at the General Service School, Fort Leavenworth, Kansas, brought Fuller's work to the forefront of U.S. Army doctrine development. Colonel William K. Naylor and Major Hjalmar Erickson, instructors at the school, managed to have the principles published in the training doctrine.¹⁹

Although the principles of war disappeared from the doctrinal publications for a period of approximately 12 years, they were reintroduced in the 1939 draft version of *Field Service Regulations* (FSRs). Since then, the principles of war have been a consistent piece of U.S. Army doctrine appearing in FSRs, Field Manual 100-5 *Operations* (with the exception of the 1976 version), and Field Manual 100-1 *The Army*. The principles of war, as they currently exist, have served the U.S. Army since 1949.²⁰

Over the years, the definition describing each principle has subtly evolved. For instance, the principle objective in 1949 included the phrase, "the ultimate objective of all military operations is the destruction of the enemy's armed forces and his will to fight."²¹ In 1993, FM 100-5 included a similar phrase, "the ultimate military purpose of war is the destruction of the enemy's armed forces and will to fight."²² Small, seemingly insignificant changes appear from one edition of the field manual to the next. The changes in many instances are mere adjustments in style. Others have more significant implications.

Chapter III: Changes Illustrated

Comparison Of The Old Principles Of War and The New Principles Of Operations

Evolution of the U.S. Army's doctrine continues today. The current set of nine principles of war are redefined in the coordinating draft of U.S. Army FM 100-5 *Operations*. The meaning of the nine principles of war is expanded to provide a more holistic definition that includes OOTW. Highlighting the changes from 1993 to the current draft, each principle is depicted along with its revision (Figures 3-11). A brief comparison will follow each figure. Changes from the 1993 version are underlined:

FM 100-5, 1993, pg. 2-4	FM 100-5, 1997, (Coord Draft), pg. 11-2-2
OBJECTIVE <i>Direct every military operation toward a clearly defined, decisive, and attainable objective.</i>	OBJECTIVE <i>Direct every military operation toward a clearly defined, decisive, and attainable goal.</i>
<p>The ultimate military purpose of war is the destruction of the enemy's armed forces and will to fight. The ultimate objectives of operations other than war might be more difficult to define; nonetheless, they too must be clear from the beginning. The linkage, therefore, between objectives at all levels of war is crucial; each operation must contribute to the ultimate strategic aim.</p> <p>The attainment of intermediate objectives must directly, quickly, and economically contribute to the operation. Using the analytical framework of mission, enemy, troops, terrain, and time available (METT-T), commanders designate physical objectives such as an enemy force, decisive or dominating terrain, a juncture of lines of communication (LOCs), or other vital areas essential to accomplishing the mission. These become the basis for all subordinate plans. Actions that do not contribute to achieving the objective must be avoided.</p>	<p><u>The principle of objective drives all military activity. When undertaking any mission, commanders should [have] a clear understanding of the expected outcome and its impact. At the strategic level this means having a clear vision of what the world should look like following an operation. As Clausewitz noted, "No one starts a war (operation)—or rather, no one in his senses ought to do so—without first being clear in his mind what he intends to achieve by that war (operation)." This is normally a desired political end state. Strategic commanders must fully appreciate the nature of this end state and how the military conditions they achieve contribute to it.</u></p> <p><u>At the operational and tactical levels objective compels commanders to insure their actions contribute to their higher headquarters' goals. Intermediate objectives must directly, quickly, and economically contribute to the desired end state. Those that do not must be avoided</u></p>

Figure 3

Figure 3 depicts the changes to the principle **objective**. They are not substantial. The biggest difference is the shift in the descriptive paragraph's focus. The previous description focused primarily on war, with a caveat to address OOTW. Now the description discusses both environments more generically, breaking down the application

of the term to the three levels of war. Emphasis on identifying and attaining the desired outcome for the operation is summarized into the new definition as the “end state.”

<p>FM100-5, 1993, pg. 2-4</p> <p>OFFENSIVE</p> <p><i>Seize, retain, and exploit the initiative.</i></p> <p>Offensive action is the most effective and decisive way to attain a clearly defined common objective. Offensive operations are the means by which a military force seizes and holds the initiative while maintaining freedom of action and achieving decisive results. This is fundamentally true across all levels of war.</p> <p>Commanders adopt the defensive only as a temporary expedient and must seek every opportunity to seize the initiative. An offensive spirit must therefore be inherent in the conduct of all defensive operations. The side that retains the initiative through offensive action forces the enemy to react rather than act.</p>	<p>FM100-5, 1997, (Coord Draft), pg. II-2-2</p> <p>OFFENSIVE</p> <p><i>Seize, retain, and exploit the initiative.</i></p> <p><u>Offensive action is key to achieving decisive results. It is the essence of successful operations. Offensive actions are those taken to dictate the nature, scope, and tempo of an operation. They force the enemy to react rather than act. Offensive operations are the means by which we impose our will. Offensive operations are essential to maintaining the freedom of action necessary for success. They are required to exploit vulnerabilities and react to rapidly changing situations and unexpected developments.</u></p> <p><u>An offensive spirit must be inherent in all actions. Even the defense must be active. Defensive measures should be taken in light of facilitating or resuming decisive offensive action.</u></p>
--	--

Figure 4

Figure 4 displays the principle of **offensive**. Revision of this principle encompasses a distinct change. From orienting on a clearly defined objective to achieving decisive results. The shift degrades the linkage to the first principle, objective. The revision further digresses by changing the outcome of adherence to this principle. Whereas before, the outcome of offensive was to seize initiative, maintain freedom of action and achieve decisive results. Now, adherence begets the imposition of our will on the enemy. The statement, “this is fundamentally true across all levels of war” is deleted. The importance of this qualifying statement is that it makes clear that the principle has a similar outcome at each level of war--decisive results. Exploiting vulnerabilities and

reacting to rapidly changing situations is added in the 1997 version. This is a positive contribution to doctrine that easily adapts to operations other than war. The remainder of the changes to this principle are minor.

<p>FM100-5, 1993, pg. 2-5</p> <p>MANEUVER</p> <p><i>Place the enemy in a position of disadvantage through the flexible application of combat power.</i></p> <p>Maneuver is the movement of forces in relation to the enemy to gain positional advantage. Effective maneuver keeps the enemy off balance and protects the force. It is used to exploit successes, to preserve freedom of action, and to reduce vulnerability. It continually poses new problems for the enemy by rendering his actions ineffective, eventually leading to defeat.</p> <p>At all levels of war, successful application of maneuver requires agility of thought, plans, operations, and organizations. It requires designating and then shifting points of main effort and the considered application of the principles of mass and economy of force. At the operational level, maneuver is the means by which the commander determines where and when to fight by setting the terms of battle, declining battle, or acting to take advantage of tactical actions. Maneuver is dynamic warfare that rejects predictable patterns of operations.</p>	<p>FM100-5, 1997, (Coord Draft), pg. II-2-3</p> <p>MANEUVER</p> <p><i>Place the enemy in a position of disadvantage through the flexible application of combat power.</i></p> <p><u>Maneuver is shifting combat power—forces and effects—to gain advantage. It is the dynamic element of warfare that concentrates and disperses combat power in a manner that places and keeps the enemy at a disadvantage, thus achieving results that would otherwise be more costly. Effective maneuver keeps an enemy off balance by making him confront new problems and new dangers faster than he can deal with them. It is the principle means by which we gain and preserve freedom of action, reduce vulnerability, and exploit success.</u></p> <p><u>Maneuver is more than just fire and movement. It is the dynamic, flexible thought, plans, and operations, and the considered application of the principles of massed effects, surprise, and economy of force.</u></p>
---	--

Figure 5

The revised definition of **maneuver** (Figure 5), is a condensed version of the 1993 doctrine. It highlights the need to shift combat power to gain advantage. It fails to discuss that maneuver is not to be sought for its own sake. Linkage of maneuver to the application of massed effects is mentioned in closing. The predominate purpose for maneuver is to place the enemy at a disadvantage, so that in war--defeat or destruction is possible. In OOTW, maneuver is used to place a potential adversary in an unfavorable position for action or reaction to friendly force initiatives. If the U.S. Army is in a humanitarian assistance operation, then this definition becomes difficult to apply and

loses its value in planning. Maneuver's original definition in U.S. Army doctrine specifically stated, "maneuver in itself can produce no decisive results, but if properly employed it makes decisive results possible through the application of principles of the offensive, mass, economy of force, and surprise."²³ This statement, although written in the negative, leaves little doubt for the reader to interpret the value of maneuver.

<p>FM100-5, 1993, pg. 2-4</p> <p>MASS</p> <p><i>Mass the effects of overwhelming combat power at the decisive place and time.</i></p> <p>Synchronizing all the elements of combat power where they will have decisive effect on an enemy force in a short period of time is to achieve mass. To mass is to hit the enemy with a closed fist, not poke at him with fingers of an open hand. Mass must also be sustained so the effects have staying power. Thus, mass seeks to smash the enemy, not sting him. This results from the proper combination of combat power with the proper application of other principles of war. Massing effects, rather than concentrating forces, can enable numerically inferior forces to achieve decisive results, while limiting exposure to enemy fire.</p>	<p>FM100-5, 1997, (Coord Draft), pg. II-2-4</p> <p><u>MASSED EFFECTS</u></p> <p><i><u>Mass the effects of combat power in a decisive manner in time and space.</u></i></p> <p><u>Forces at all levels mass the effects of combat power to overwhelm opponents and gain control of the situation. We mass military power to achieve both destructive and constructive effects. We mass in time by applying the effects of combat power simultaneously, this achieves an overwhelming moral and systems effect—overload. we mass in space by concentrating combat power effects against a select combination of physical points.</u></p> <p><u>Massing does not mandate concentration against one or two points. Commanders mass against the right combination of points. The aim is to strike a combination of critical elements whose loss shatters the coherence of enemy operations. These elements may be deployed in a small area and vulnerable to concentrated attacks which mass in time and space. Others may be spread throughout the battlespace and vulnerable only to simultaneous, distributed operations which mass in time.</u></p>
---	---

Figure 6

The revised description of mass (Figure 6), is a better representation of the results expected from the application of this principle. Enabling the user to apply the principle to OOTW with the sentence, "we mass military power to achieve both destructive and constructive effects." The majority of the new definition focuses on applying destructive effects against enemy forces in combat. The revised principle's goal is to mass in time,

space and place to shatter the coherence of enemy operations. Potential enemies may be complex, adaptive systems requiring friendly massed effects in time and space to overwhelm them. It is important to note that less sophisticated opponents may cause U.S. Army operations to evolve and adapt force employment methods to achieve massed effects in this manner.

<p>FM 100-5, 1993, pg. 2-5</p> <p>ECONOMY OF FORCE</p> <p><i>Employ all combat power available in the most effective way possible; allocate minimum essential combat power to secondary efforts.</i></p> <p>Economy of force is the judicious employment and distribution of forces. No part of the force should ever be left without purpose. When the time comes for action, all parts must act. The allocation of available combat power to such tasks as limited attacks, defense, delays, deception, or even retrograde operations is measured in order to achieve mass elsewhere at the decisive point and time on the battlefield.</p>	<p>FM 100-5, 1997, (Coord Draft), pg. II-2-4</p> <p>ECONOMY OF FORCE</p> <p><i>Employ all combat power available in the most effective way possible; allocate minimum essential combat power to secondary efforts.</i></p> <p><u>Economy of force ensures no effort is wasted. As Clausewitz noted, "When the time for action comes, the first requirement should be that all parts must act" decisively. Economy of force is a reciprocal of the principle of massed effects. It requires that minimum resources be employed in areas away from the main effort, whether that effort is directed against a single point or a combination of distributed points.</u></p> <p><u>Economy of force requires accepting prudent risk in selected areas to achieve superiority—overwhelming effects—where decision is sought. Economy of force missions often require the forces employed to conduct operations with the bare minimum of essential resources.</u></p>
--	--

Figure 7

Figure 7 depicts the principle of **economy of force**. Revision of this principle is essentially saying the same thing with different words and phrases. Reference to accepting prudent risk is a notable improvement, since risk is inherent to all operations.

FM100-5, 1993, pg. 2-6

SIMPLICITY

Prepare clear, uncomplicated plans and concise orders to ensure thorough understanding.

Everything in war is very simple, but the simple thing is difficult. To the uninitiated, military operations are not difficult. Simplicity contributes to successful operations. Simple plans, and clear, concise orders minimize misunderstanding and confusion. Other factors being equal, the simplest plan is preferable. Simplicity is especially valuable when soldiers and leaders are tired. Simplicity in plans allows better understanding and troop leading at all echelons and permits branches and sequels to be more easily understood and executed.

FM100-5, 1997, (Coord Draft), pg. II-2-4

SIMPLICITY

Prepare uncomplicated concepts and plans and direct, concise orders to ensure thorough understanding.

At all levels concepts, plans, and orders should be as simple and direct as possible. Other factors being equal, the simplest concepts and plans are normally the best. Clear, concise orders minimize confusion and misunderstanding.

Figure 8

Reductions to the definition of **simplicity** (Figure 8), clearly demonstrates the intent of this principle. Omitting the line, “simplicity contributes to successful operations,” may have overstepped the intended value of the term. Simplicity is a widely accepted notion for successful operation planning and execution.

FM100-5, 1993, pg. 2-5

SURPRISE

Strike the enemy at a time or place or in a manner for which he is unprepared.

Surprise can decisively shift the balance of combat power. By seeking surprise, forces can achieve success well out of proportion to the effort expended. Rapid advances in surveillance technology and mass communication make it increasingly difficult to mask or cloak large-scale marshaling or movement of personnel and equipment. The enemy need not be taken completely by surprise but only become aware too late to react effectively. Factors contributing to surprise include speed, effective intelligence, deception, application of unexpected combat power, operations security (OPSEC), and variations in tactics and methods of operation. Surprise can be in tempo, size of force, direction or location of main effort, and timing. Deception can aid the probability of achieving surprise.

FM100-5, 1997, (Coord Draft), pg. II-2-4

SURPRISE

Achieve effects disproportionate to the effort by taking unexpected action.

Surprise results from taking action for which an opponent is unprepared. It is not essential that the enemy be taken completely unaware, only that he become aware too late to react effectively. Factors contributing to surprise include speed, employment of unexpected systems, deception operations, variations of tactics and methods of operation, and operation security. Information dominance is key to surprise.

Surprise applies to the full range of operations. For example, in operations against a hostile force, surprise can greatly magnify the effect of combat actions and systems. In other situations, forces may preempt violence by demonstrating an unexpected capacity for combined arms combat. They may thwart attempts at terrorism and thievery by unexpectedly changing routines when delivering supplies and services.

Figure 9

Surprise, displayed in Figure 9, is rewritten to accommodate the full range of operations and to address information operations. The addition of the phrase, “surprise applies to the full range of operations,” implies that the other principles may not have the same full range application. The intention is for all the principles to have application across the full range, as stated in the draft, “the principles of operations apply to the full range of actions, including those where commanders apply force selectively, and restraint and nonlethal aspects of power dominate.”²⁴ Deleting the reference to surprise in tempo, size of force, direction or location of main effort and timing is debatable. This short list of possibilities for surprising enemy forces may have been useful to applying the principle in many situations.

<p style="text-align: center;">FM100-5, 1993, pg. 2-5</p> <p>UNITY OF COMMAND</p> <p><i>For every objective, seek unity of command and unity of effort.</i></p> <p>At all levels of war, employment of military forces in a manner that masses combat power toward a common objective requires unity of command and unity of effort. Unity of command means that all the forces are under one responsible commander. It requires a single commander with the requisite authority to direct all forces in pursuit of a unified purpose.</p> <p>Unity of effort, on the other hand, requires coordination and cooperation among all forces - even though they may not necessarily be part of the same command structure - toward a commonly recognized objective. Collateral and main force operations might go on simultaneously, united by intent and purpose, if not command. The means to achieve unity of purpose is a nested concept whereby each succeeding echelon's concept is nested in the other. In combined and interagency operations, unity of command may not be possible, but the requirement of unity of effort becomes paramount. Unity of effort - coordination through cooperation and common interests - is an essential complement to unity of command.</p>	<p style="text-align: center;">FM100-5, 1997, (Coord Draft), pg. II-2-6</p> <p>UNITY OF EFFORT</p> <p><u><i>Achieve common purpose and direction through unity of command, coordination and cooperation.</i></u></p> <p><u>Employing military forces in a manner that develops their full combat power requires unity of effort. Unity of effort directs and coordinates the action of all forces – military and civilian – toward a common goal or objective. Whenever possible, unity of effort should be achieved through unity of command – vesting a single commander with the requisite authority to direct and coordinate all forces employed in pursuit of a common goal. When this is not practical, forces achieve unity of effort through coordination and cooperation.</u></p>
---	---

Figure 10

The revision of **unity of effort** (Figure 10), is a good example of saying more with less. Exception to this assessment is the deletion of the portion of the old definition discussing “nested concepts.” Nested concepts were previously stated as, “the means to achieve unity of purpose is a nested concept whereby each succeeding echelon’s concept is nested in the other.”²⁵ Nested concepts are an important means of achieving common purpose and direction of efforts. Clearly understanding the linkage between one unit’s mission and others enables vertical and horizontal integration of effort to achieve the overarching purpose.

Given that principles are an aid to developing thoughts and concepts for planning operations, the basis for that conceptual framework should include the commander’s concept of the operation. The ability to effectively link the concepts of each echelon’s operation to the highest commander’s enhances the overall unity of effort. General William E. DePuy, wrote this about commanders’ concepts:

Concepts--The Heart of the Command and Control (C2) Process. It is the aim of every commander to concentrate all available combat power against the enemy at just the right time and in just the right place to win battles, campaigns and wars....and the commander’s concept of operation is at the heart of that system. It is the driving central theme to which all the actions of all elements of the force are keyed.²⁶

Achieving true unity of effort hinges upon the force’s ability to effectively orchestrate all the actions of all elements of the force toward accomplishing the mission.

General DePuy elaborates on the importance of nested concepts by explaining how they work:

Nested Concepts. When the top commander develops and disseminates his concept...he obliges his subordinates to conform and execute. Each successive

subordinate is expected to articulate and elaborate that concept in accordance with the particular conditions...thus, the higher concepts are progressively tuned to local reality. This is the genius of the system--a centralization of concept, a decentralization of execution and a full exploitation of forces and opportunities. Cascading [nested] concepts carry the top commander's intentions to the lowest levels, and the nesting of those concepts traces the critical path of concentration and priorities.²⁷

DePuy's comments are testimony to the benefits derived from nested concepts. The advantages gained from achieving concentration and clear prioritization of efforts throughout a force can be the overwhelming ingredient in a recipe for success. Disregarding this important piece of doctrine is an example of a seemingly small omission with possibly adverse implications.

FM100-5, 1993, pg. 2-5	FM100-5, 1997, (Coord Draft), pg. II-2-7
SECURITY	SECURITY
<i>Never permit the enemy to acquire unexpected advantage.</i>	<i>Never permit the enemy to acquire an unexpected advantage.</i>
Security enhances freedom of action by reducing vulnerability to hostile acts, influence, or surprise. Security results from the measures taken by a commander to protect his forces. Knowledge and understanding of enemy strategy, tactics, doctrine, and staff planning improve the detailed planning of adequate security measures. Risk is inherent in war; however, commanders must not be overly cautious. To be successful, commanders must take necessary, calculated risks to preserve the force and defeat the enemy. Protecting the force increases friendly combat power.	<u>Security is essential to protecting and preserving combat power. Security results from the measures taken by a commander to protect itself from surprise, observation, detection, interference, espionage, sabotage, or annoyance. Security may also be obtained by deception operations designed to confuse and dissipate enemy attempts to interfere with the force and the operation. The principle of security does not suggest over-cautiousness or avoiding calculated risk, which is an inherent part of conflict.</u>

Figure 11

The principle of **security** (Figure 11) depicts little change from the previous edition of FM 100-5. Discussion about the commander protecting the unit from surprise, observation, detection, interference, espionage, sabotage or annoyance is more specific than in the past. Deception operations enhancing security is a new comment describing the potential benefits of using these resource intensive operations.

The New Principles - Morale and Exploitation

The principles of **morale** and **exploitation** are completely new to U.S. Army Doctrine. Why did the earlier editions of FM 100-5 *Operations* not include these two principles? This question cannot be answered without asking the authors of the previous editions, dating back to 1921. It is possible to review the proposed principles and debate their necessity, validity and applicability. Why, after so long without them, does U.S. Army doctrine now require them? This is the more relevant question for the reader to ponder and this monograph to explore.

The first new principle to be discussed is morale. Authors of the new doctrine, FM 100-5 *Operations* (Coordinating Draft), define morale as:

Morale-- Build, maintain, and restore fighting spirit.

“It is the morale of armies, as well as of nations, more than anything else, which makes victories and their results decisive.” Antoine Henri Jomini

Warfare is ultimately a human endeavor that relies primarily on the fighting spirit--morale--of soldiers and units engaged. Leaders at every level must understand that a force's fighting spirit requires constant attention. It must be deliberately built, actively maintained, and constantly restored.

Soldiers and units do not have an inexhaustible supply of morale. It is continually sapped by the dangers and hardships of campaigning. Fighting spirit is maintained by providing competent, confident, disciplined leadership; proper tools to accomplish assigned missions; and adequate food and rest. It is restored by opportunities to recover from perilous, demanding missions. Leaders must take all necessary steps to appraise the fighting spirit of their units and take necessary steps to keep it at the highest possible level.²⁸

Discussion of the definition is important when considering the merit of adding this principle. *Webster's New Collegiate Dictionary* defines morale in two insightful ways:

The mental and emotional condition (as of enthusiasm, confidence, or loyalty) of an individual or group with regard to the function of tasks at hand...a sense of common purpose with respect to a group: ESPRIT DE CORPS...the level of individual psychological well-being based on such factors as sense of purpose and confidence in the future.²⁹

Webster's definition provides many of the essential components of the doctrinal definition. Warfare truly is a human endeavor. The mental and emotional state of the individuals or groups involved in U.S. Army operations are an integral part of the operation's success or failure. Commanders and leaders at all levels should consider the psychological and emotional effects of the soldiers who will execute assigned tasks.

Carl von Clausewitz noted in his classic work *On War* the importance of morale, "the principle moral elements are: the skill of the commander, the experience and courage of the troops, and their patriotic spirit."³⁰ Courage and spirit are certainly basic elements of what the authors of the new FM 100-5 refer to as the "fighting spirit." Clausewitz goes on to say:

Military spirit, then, is one of the most important moral elements in war. Where this element is absent, it must either be replaced by one of the others, such as the commander's superior ability or popular enthusiasm, or else the results will fall short of efforts expended....One would have to be blind to all the evidence of history if one refused to admit that the outstanding success of these commanders and their greatness in adversity were feasible only with the aid of an army possessing these virtues.³¹

The essence, of Clausewitz's thoughts regarding the morale of an army, is that units are doomed to failure if they lack the virtue of morale. Moreover, outstanding units are those with high morale and esprit de corps.

Armies of Great Britain, Australia, the People's Republic of China and the former Soviet Union recognize the importance of morale as a principle of war. Inclusion of morale as one of their principles of war suggests that consideration of the effects of combat on the morale of their forces is appropriate and required. If the U.S. Army

considered including morale in earlier doctrine, then why was it not added? It may be that the authors thought it was intuitively obvious that addressing issues of soldier morale and the effects of operations on the force should always occur.

The definition of morale should state the outcome that the principle expects to achieve. Is “fighting spirit” the appropriate mind set for soldier morale in OOTW? Peace operations create and maintain conditions necessary for peace. Peace operations are comprised of three types of activities: support to diplomacy (peacemaking, peace building, and preventive diplomacy), peacekeeping and peace enforcement.

Often occurring in environments that are less well-defined than in war, peace operations can be characterized by belligerents whose identities and motives may be difficult to ascertain. Loosely organized groups, terrorists, criminals and other conflicting segments of a population are possible threats to U.S. forces and the peace process. A unit embedded with a strong “fighting spirit” may experience difficulties transitioning to a less defined and potentially non-hostile environment. The concept of traditional military victory or defeat is less appropriate in peace operations than in war. If the principles of operations are to have applicability to all operations, then the definition of the principle of morale should not focus primarily on war.

Exploitation is the other new principle. Evidence to support the addition of this principle is not as intuitively obvious as morale. Speculation as to why this principle was added may lead to at least three conclusions. One possible explanation is that exploitation has not been well planned or executed in past U.S. Army operations. Instances of U.S. Army operations failing to exploit the initiative have occurred

throughout history. Another possible answer may be that the means to execute exploitation operations has increased. Technology available today may enable commanders to gain greater situational awareness. Situational awareness allows for faster, more accurate understanding of the enemy and friendly situations near the close of an attack. The possibility of successful exploitation at this critical juncture of an operation has increased. Potentially the third reason is to elevate the importance of exploitation operations in U.S. Army doctrine. Acceptance of exploitation into the principles of operations suggests a more important role for this aspect of offensive operations.

Numerous U.S. Army exploitation operations have occurred over the past 200 years. Successful offensives are abundant and easily seen during this time, yet it is much more difficult to ascertain the missed opportunities for successful exploitation. Two historical examples provide evidence for this assertion.

The first example comes from America's Civil War, during the Vicksburg Campaign, specifically the battle of Champion Hill, 16 May 1863 (See map, Appendix A, Enclosure 1). The U.S. Army (Union Forces) defeated the Confederate States Army (C.S.A.) in a decisive battle and forced the Confederates to withdraw to the confines of the Vicksburg, Mississippi trench works. Resulted in a 47 day siege operation, the Confederate commander, John Pemberton surrendered, 4 July 1863. Opportunity to exploit success occurred in the late afternoon of 16 May, 1863 near the end of the battle. Union Forces under General Grant had met the Confederate Army Forces of General Pemberton in a hard fought and confusing meeting engagement. After over five hours of

fighting the two sides had exchanged possession of the dominate terrain feature, Champion Hill, three times. Immediately following the third exchange of the hill's possession, the Confederates began a disorganized withdrawal from the battlefield.

It is during this window of opportunity that the numerically superior and now operationally successful Union Forces failed to exploit the success they had gained³². Three Confederate divisions faced Grant's Army in the field that day. Organized under General Pemberton, the three divisions were led by General Bowen, General Loring and General Stevenson. Two additional Confederate divisions remained about 20 miles away in the safety of the Vicksburg trench-works. Grant, having first defeated Stevenson's Division, next laid waste to the counterattacking forces of General Bowen. General Loring, in the fog and friction of the confused and bloody battlefield, withdrew his force completely from the fight to the south. The battle of Champion Hill commenced at approximately 10:30 A.M., and by 5:30 P.M. the Confederates were in full withdrawal. The victorious Union Forces rested until the early morning hours of May 17 (See map, Appendix A, Enclosure 2).³³

The failure to exploit the success of the day's battle resulted in the escape of much of the Confederate force. Speculation about what may have happened if the Union had pressed the attack and exploited their success is fraught with conjecture. It is fairly obvious from a review of the forces' disposition, composition and ability to continue fighting that the Union forces clearly had the upper hand.

A more recent example of the failure of U.S. Army forces to exploit an operational success is the battle of the Falaise Gap, August 1944. The campaign for

France during World War II (WWII) was punctuated by the Allied invasion of the Normandy beaches and the subsequent push across France. First and Third U.S. Armies, along with the Second British and First Canadian Armies, had successfully attacked the German Fifth Panzer Army, Seventh Army and Panzer Group Eberbach. The Falaise Gap developed south of Falaise, France, running west to Flers and around to the east vicinity, Argentan (See map, Appendix A, Enclosure 3). In the center of the gap were the towns of Putanges, Trun and Chambois. The “gap” formed between the advancing Allied Forces from 8-19 August, 1944. To have effectively closed the escape routes on the eastern end of the Falaise Gap, the Canadian 4th Division and Polish 2nd Division from the northwest near Trun, and the American 90th Division advancing north from St. Leonard, would have had to link up (See Appendix A, Map 4). Link up did not occur until the 19th of August, allowing for approximately 20,000- 40,000 German Troops to escape.³⁴ A large number of key German commanders were included in these figures.³⁵

The battle at the Falaise Gap has been described as both a missed opportunity for exploitation and a great victory. A case can be made for either argument. General Omar Bradley’s failure to approve the further advance of the XV Corps beyond Argentan on 13 August is a strong candidate for a failure to exploit success. Robert Miller, writes in his book, *August 1944*, “It is a reasonable assumption that the gap could have been closed along the Argentan-Falaise road within two or three days at the most if Bradley had requested a change in army boundaries and then committed forces to press the attack.”³⁶ Author’s speculate that Bradley was reluctant to order the closure of two armies in the manner of a head on juncture because it is a difficult and dangerous maneuver.³⁷

The definition of exploitation is elusive in previous U.S. Army doctrine. One definition found in FM 101-5-1, *Operational Terms and Graphics* states: “taking full advantage of success in battle and following up initial gains...an offensive operation that usually follows a successful attack and is designed to disorganize the enemy in depth.”³⁸ Other definitions may be extracted from doctrinal publications, but are not clearly stated for the reader.

Evolving doctrine takes a more authoritative stance on the definition of exploitation:

Exploitation-- *Take advantage of and make lasting the temporary effects of battlefield success.*

At every level, commanders must plan to secure the results of successful operations.

Indeed, no operation is successful until and unless it has been properly exploited.

Leaders must develop plans and allocate sufficient resources to ensure that opportunities created by initial gains are rapidly and decisively exploited.³⁹

As written, the principle is primarily oriented towards war. Battlefield successes may occur in OOTW, however, as a matter of planning and for operational analysis, exploitation is best suited to war. To make the principle more universally appropriate, the last part of the one sentence definition should be changed. Instead of “battlefield successes,” the words “successful operations” should be used.

The term “exploitation” exists in current U.S. Army doctrine. Exploitation is a major type of offensive operation. The meaning of the term is not very different than the definition provided above. A recent description of exploitation is found in FM 100-15

Corps Operations:

The disruptive effects of a successful attack should be exploited. The purpose of exploitation is to prevent the enemy from reconstituting an organized defense,

counterattacking, conducting an orderly withdrawal, or continuing to support his operations. Exploitation is the chief means of translating a tactical success into operational advantage.⁴⁰

This description emphasizes the key aspects that were neglected during the two historical examples. Union Forces at Vicksburg and the Allied Forces in WWII failed to prevent the enemies withdrawal and allowed the enemy to continue supporting the operation. Attackers' should immediately follow up on initial gains by maintaining continuous offensive pressure, thus seizing the initiative and exploiting the opportunity. Consideration of friendly forces capabilities at the time the opportunity arises is of utmost importance. Factors such as fatigue, morale, and logistical situation must be weighed against the risks associated with exploitation.

The new definitions claim that "no operation is successful until and unless it has been properly exploited" is a potential recipe for U.S. Army operations failure. It is the exception, not the rule, when armies exploit the success gained during an operation. Commanders at all levels should remain vigilant to the signs of an enemy being vulnerable to friendly force exploitation. The 1993 version of FM 100-5, *Operations* summed up this well:

Commanders of committed forces act fast to capitalize on local successes. When possible, the forces already leading the attack continue directly into the exploitation. If that is not feasible, commanders pass fresh forces into the lead. Exploitation requires the physical and mental aggressiveness to combat the friction of night, bad weather, dangers of fratricide, and extended operations. After weighing and accommodating the risks, commanders ruthlessly exploit vulnerable forces.⁴¹

Two points that are underlined above deserve attention. If the principles of operations are to apply to OOTW, then the first, "exploitation requires the physical and mental

aggressiveness,” is written in an applicable manner. Physical and mental aggressiveness may be appropriate behavior across the entire range of operations. The second point, “commanders ruthlessly exploit vulnerable forces” has its place in both OOTW and war. However, in OOTW, that same “ruthless” exploitation may have far reaching, negative connotations. Words of wisdom, shared by a WWII Sergeant-Major, regarding the principles of war emphasize a warrior’s mentality, “There’s only one principle of war and that’s this. Hit the other fellow, as quick as you can, and as hard as you can, where it hurts the most, when he ain’t lookin!”⁴² This warrior mentality is most suited for the combat environment.

Exploitation is already addressed in U.S. Army doctrine in the principle of the offensive. The old and new versions of FM 100-5’s definition emphasizes the phrase, “seize, retain, and exploit the initiative.” Commanders’ consideration of this aspect of offensive operations should result in the same positive effects as the new principle of exploitation.

The Missing Principles Of OOTW

Three of the principles of OOTW are incorporated into the principles of *operations*. These are objective, unity of effort and security. Moreover, three principles of OOTW are currently unaccounted for: legitimacy, perseverance and restraint. Rationale for omitting the three distinct principles is worthy of discussion and debate. The most obvious reason for omission of these principles is the fact that each applies to operations across the entire spectrum of conflict, not just OOTW. United States military forces require legitimacy, perseverance and restraint in war as well as OOTW.

The first principle of OOTW to be addressed is **legitimacy**. Stated in the 1993 edition of FM 100-5, “Legitimacy - *Sustain the willing acceptance by the people of the right of government to govern or if a group or agency to make and carry out decisions,*”⁴³ suggests that the application of force should always be sanctioned by the people. Legitimacy is the mental perception of the people concerning the morality, legality and correctness of actions taken or inaction by military forces. The people concerned may be the U.S. public, U.S. forces, host nation or belligerent parties, and the international community. U.S. Military Forces awareness of international opinion should be considered in all operations. International norms for military conduct and respect for humanitarian principles have equal weight in OOTW and war.

The second OOTW principle that is deleted is **perseverance**. Definition of this principle is a cautionary note to commanders, “*prepare for the measured, protracted application of military capability in support of strategic aims.*”⁴⁴ The principle is intended to highlight the possibility of OOTW taking a long time, potentially many years, to resolve.

Description of the principle perseverance points out that underlying causes of confrontation and conflict rarely have a clear beginning or a decisive conclusion. This can also be said for operations in war. Carl von Clausewitz acknowledges this truth by stating, “...even the ultimate outcome of a war is not always to be regarded as final. The defeated state often considers the outcome merely as a transitory evil, for which a remedy may still be found in political conditions at some later date.”⁴⁵ His far-sighted observation on the nature of war applies to a range of operations.

An excellent contrast between units with varying degrees of perseverance was seen at the battle of Gettysburg, during the Civil War. On the first day of the battle, 1 July 1863, Union Forces under General Meade established defensive positions west and north of Gettysburg (See map, Appendix A, Enclosure 5). Major General John F. Reynolds and the 1st Corps held their position for over six hours of intense fighting. Reynold's, killed in action during the battle, was replaced by Major General Abner Doubleday. First Corps continued to fight effectively even after the loss of it's beloved commander.⁴⁶ Eleventh Corps, commanded by Major General Oliver O. Howard, in the same battle was essentially thrown back from their defenses in about one hour. The striking difference in the two forces' resolve and perseverance is a question of leadership and unit cohesiveness.

Restraint is the third principle of OOTW that has been omitted. The short definition of this axiom contains common sense advise for any operation, "*apply appropriate military capability prudently.*"⁴⁷ Commanders are well advised to avoid the excessive use of military force in almost any circumstance. Adverse affects on the U.S. Army's ability to attain the short and long term goals of an operation may develop when excessive force is applied. Restraints on weaponry, tactics and levels of violence deemed appropriate for the situation are carefully spelled in rules of engagement (ROE) and command guidance.

Doctrine found in FM 100-23 *Peace Operations*, provides an example of the dilemma of applying restraint only to peace-enforcement operations. The manual states:

In all cases, force will be prudently applied proportional to the threat. In peace

operations, every soldier must be aware that the goal is to produce conditions that are conducive to peace and not to the destruction of an enemy. The enemy is the conflict, although at times such operations assume the character of more traditional combat operations. The unrestrained use of force will prejudice subsequent efforts at achieving settlement.⁴⁸

The same cautions should apply to any U.S. military operation, regardless of the nature of the circumstances. The goal of producing conditions that are conducive to peace is just as appropriate for combat operations as OOTW. Destruction of an enemy may be a requirement in any operation. To disregard this reality is dangerous and ill-advised. One need only look to recent events in Somalia to see a vivid example of an OOTW environment turned hostile towards friendly force operations.

On 3 October, 1993 U.S. Army Rangers conducted a daylight helicopter raid in Mogadishu, Somalia. A summary of the battle is proof of the combat nature of this operation, "the U.S. forces were surrounded and in the ensuing fire-fight suffered terrible casualties--18 dead, 84 wounded and 1 helicopter pilot captured....Somali leaders estimated their casualties at 312 killed and 814 wounded."⁴⁹ To state that the enemy is the "conflict" clouds the issue. The conflict may be the focus of the military forces efforts, yet it is not the "enemy."

Reviewing the proposed revisions and the addition of two new principles to Army doctrine provides a general overview of the scope of change. The interoperability of the U.S. Army's new principles of *operations* with its Sister Services and compliance with Joint doctrine is another matter worthy of discussion. The following chapter will discuss this issue.

Chapter IV - Sister Service And Joint Doctrine Review

Joint Publication 3-0: *Doctrine for Joint Operations*, articulates the same principles of war that the U.S. Army adheres to today. Individual Service doctrine is intended to derive from joint doctrine. The U.S. Army predates joint forces organization and doctrine. In reality, joint doctrine writers developed the joint principles of war using the Army's traditionally accepted ones. Although the descending nature of the U.S. Military assumes that the Services principles of war will conform to the joint doctrine, in practice this is not the case. Because of the unique characteristics of each service, discussions and descriptions of the principles of war are varied. Both, the U.S. Air Force and Marine Corps, have deviated from the joint principles of war (See Figure 2).

Joint operations success or failure does not hinge on perfectly nested principles of war. However, it is important for commonly accepted military principles to serve as a point of reference when organizing a joint force and establishing command processes. Simply expressed in a recent article by Colonel Herbert R. Tiede, USMC (Ret), "the principles of war must be incorporated into the daily life of the warrior, whatever Service, if we are to enjoy the full success of joint and combined operations."⁵⁰ Colonel Tiede's opinion may be too emphatic, yet the interoperability of the joint force is enhanced by common doctrine and accepted practices.

The most extreme non-conformance to the joint principles of war is found in the U.S. Marine Corps' FMFM 1 *Warfighting*. FMFM 1, discusses the theory of war, and contains no mention of principles of war. The chapter eludes to six methods of

developing and enhancing combat power: **concentration** and **speed**, surprise and boldness, exploiting vulnerability and opportunity.⁵¹ Some of these methods can be compared to, and made compatible with, joint doctrine's principles of war. For example, concentration is very similar to mass and surprise is virtually the same principle. Marine Corps FMFM 1 states, "of all the consistent patterns we can discern in war, there are two concepts of such significance and universality that we can advance them as *principles*: **concentration and speed**."⁵² Using Clausewitz's theory, "in short the first principle is: *act with the utmost concentration*....The second principle is: *act with the utmost speed*,"⁵³ the Marine Corps published its doctrine in a more subtle way. The Marine Corp's other methods of developing combat power are unique and less aligned with joint doctrine's principles of war. Combinations of a few, or all of the Marine imperatives to combat power may result in the same positive effects of using the principles of war.

In the 1980s, the U.S. Air Force expanded the nine joint principles of war to twelve. Adding timing and tempo, logistics and cohesion completed the Air Force's list. Their approach to expanding the principles of war from nine to twelve appeared less contentious and more conformed to joint doctrine. The Air Force's former principle of "cohesion" roughly matches the Army's proposed new principle of "morale." Air Force Manual 1-1 *Basic Aerospace Doctrine of the United States Air Force*, stated:

This [*cohesion*- authors addition] is the principle of developing and maintaining an esprit de corps and capability of a force to win. *Cohesion* [emphasis added] is what holds a unit together in combat and is essential to a force's fighting effectiveness. History shows *cohesive* [emphasis added] units usually win, while disjointed forces usually met defeat. *Cohesion* [emphasis added] in a force is developed over time by effective leadership at all levels of command.⁵⁴

Replace the word "cohesion" with the word "morale" in this paragraph and the same basic principle emerges.

Chapter V - Conclusion, Assessment And Recommendations

The old Service saying, “the Army isn’t what it used to be -- and never was,” applies to the dilemma faced by authors of new doctrine. Armies historically chase better doctrine in hopes it will improve the probability for more successful execution in the future. General George H. Decker once commented, “doctrine provides a military organization with a common philosophy, a common language, a common purpose, and a unity of effort.”⁵⁵ The benefits of laying a solid foundation of doctrine include the bedrock of principles. A common mental framework for future operations may be enhanced by the principles developed today. The true assessment of this body of doctrine will occur in the future, on a distant battlefield or peacekeeping operation.

The most important change incorporated in the new FM 100-5 *Operations* is the integration of the principles of war, along with the principles of OOTW, into the principles of *operations*. This integration is done well with four exceptions. The principles of *operations*, offensive and maneuver, are not appropriately defined. The definitions as they exist apply primarily, if not solely, to the environment of war. The two new principles of *operations*, morale and exploitation, fall into the same trap. The definitions have a war-time context.

The unique nature of war and OOTW require different thought processes. However, this does not mean that fundamental doctrine cannot transcend the spectrum of conflict. This is particularly true of the principles of *operations*. If the principles of *operations* are to provide the foundation for U.S. Army doctrine, then they should be written in a manner that assists the users shifting thought process.

The incorporation of the OOTW principles into the principles of *operations* is a common sense reduction that should improve decision making. The three principles of OOTW that are already included: objective, unity of effort and security are easily transferred to either environment as they are currently written. The other three: legitimacy, perseverance and restraint are of equal importance in either war or OOTW and do not require an additional set of distinct principles. As noted earlier, the draft FM 100-5 *Operations* author's note:

The nation applies military power in a variety of ways to achieve strategic objectives; military power is not limited to violence and overt hostilities. The principles of operations apply to the full range of actions [author uses the phrase, "spectrum of conflict--or operations"], including those where commanders apply force selectively, and restraint and nonlethal aspects of power dominate.⁵⁶

Application to the full range of actions is a key component to this body of doctrine.

Conforming the core principles to apply universally is a challenging proposition.

Have the authors of the new edition of FM 100-5 *Operations* focused in on the right additions and included appropriate revisions? The answer to this question is fleeting. The only way to truly test the new principles is to subject them to the test of time, experience and historical review afforded by future operations.

The list of potential principles of operations is endless. Over the last two decades authors have proposed additions and deletions to the current set of principles of war. Depicted in Figure 12 are four examples of possible candidates for inclusion in U.S. Military doctrine. The authors from the Strategic Studies Institute (far left, Figure 12) recommend developing principles that apply primarily to the strategic level of war.⁵⁷ Two Air Force authors, Collins and Jensen, writing in the *Air University Review* and

OTHER PROPOSED PRINCIPLES				
Principles Of War At The Strategic Level		Principles Of Deterrence	Other Proposed Principles Of War	
Objective		Preparedness	Intelligence	
Initiative		Nonprovocation	Strategy	
Unity of Effort		Prudence	Technology	
Focus		Publicity	Logistics	
Economy of Effort		Credibility	Diplomacy	
Orchestration		Uncertainty	Tiede, USMC Gazette, 1995	
Clarity		Paradox	Decapitation	Survivability
Surprise		Independence	Sensor Primacy	Interoperability
Security		Change	Knowledge	Hierarchy
Strategic Studies Institute, 1 August 1995		Collins, Air Univ. Rww, 1979	Alacrity	Intensity
			Jensen, AirPower Journal, 1994	

FIGURE 12

FIGURE 12

AirPower Journal, submit separate lists relating to specific concerns (Collins for deterrence, Figure 12, center,⁵⁸ and Jensen for information warfare, Figure 12, lower right⁵⁹). The final example is from Tiede, writing in the *Marine Corps Gazette* (See Figure 12, upper right).⁶⁰ The scope of this paper will not allow for an in-depth discussion of each of these proposed principles. However, existence of the distinct lists is important and helps demonstrate the problem of identifying the optimal set of principles.

These proposed alternative principles may have future merit, but do they suffice for the purposes of the U.S. Army or Joint doctrine? The principles recommended in Figure 12 were written to apply primarily to war, yet with some fluidity of thought, many transcend to OOTW as well. Consideration of a wide pool of potential principles for emerging doctrine is beneficial and constructive. The difficulty of focusing on the “correct” set of five, ten, or fifteen cannot be overemphasized.

An innovative approach to this process is presented by the authors’ from the Strategic Studies Institute, in “principles of war at the strategic level.”⁶¹ These writers

argue that the strategic level of war requires a unique set of principles. The same logic that requires separate principles for each point along the spectrum of conflict drives the argument for distinct principles for each level of war (strategic, operational and tactical). Universality of the existing nine joint principles of war enables them to transcend the levels of war.⁶² The challenge this presents to the user is obvious, making nine principles stretch to fit all unique situations and varying circumstances. Principles of *operations* must be developed with the same applicability as the principles of war.

An analysis of the principles of *operations* resulted in the following recommendations:

-Offensive: Retain the two phrases from the 1993, FM 100-5 *Operations*: “offensive action is the most effective and decisive way to attain a *clearly defined common objective*.” And, “offensive operations are the means by which a military force *seizes and holds the initiative while maintaining freedom of action*...[vice--means to impose our will].”

Both of these sentences easily transcend a range of operations. The orientation of the user’s thought process towards obtaining the objective is extremely important for any operation. Decisive results mentioned in the draft edition may not be focused on the objective. An example of this may be found in the Vietnam conflict. Decisive results were attained in many tactical engagements, yet the strategic objective was not accomplished.⁶³

The second sentence recommended for retention enables the imposition of our will in a war, or the process of peace in an OOTW operation. Initiative and freedom of

action, whether in war or OOTW, provide the offensive force the ability to impose its will on an opponent.

-Maneuver: First, re-introduce the phrase from the 1993, FM 100-5

Operations: “maneuver in itself can produce no decisive results.” Second, consider using the term, “resources” vice “combat power” in the principles definition.

The first recommendation for maneuver is a subtle reminder that although it is beneficial to maneuver in any conflict, its purpose is to attain decisive results. Decisive results are the product of effective maneuver in conjunction with the application of combat power. Positional or situational advantage is gained by effective maneuvering of the forces and resources available. Combat power is composed of four elements: maneuver, firepower, protection and leadership.⁶⁴ The ability to best combine these four elements leverages the ability to win.

Huba Wass de Czege wrote, “combat power is always relative, never absolute and has meaning only as it compares to that of the enemy.”⁶⁵ If, in some OOTW situations there is no “enemy,” then the phrase combat power has less meaning. There is still a requirement to allocate the armies resources, yet many of them may not be strictly warfighting capabilities. A reverse osmosis water purification unit (ROWPU) for example, in an arid climate may be a critical piece of equipment. Positioning that ROWPU becomes the focus of the operation.

The second recommendation, *resources* vice *combat power*, achieves the same results, yet maintains a more universal application of the principle in the range of

operations. Essentially the same rationale for including the first recommendation applies here as well.

-Unity of Effort: Recommend retention of the portion of the 1993 version's definition discussing "nested concepts." Nested concepts are an important means of understanding the linkage between one unit's mission and others to enable vertical and horizontal integration of effort, thus achieving the overarching purpose.

Effectively linking the concepts of each echelon's operation, to that of the highest commander's, enhances the overall unity of effort. Accomplishing assigned missions relies upon the force's ability to effectively orchestrate the actions of all elements of the force in a common unity of effort. Disregarding "nested concepts" is an example of a seemingly small omission with possibly severe implications.

-Morale: Use the phrase "military spirit" or "winning spirit" vice, "fighting spirit." A summary of the mental images required of a military spirit that transcends easily from war to OOTW is found in the following quote:

Morale is a state of mind. It is that intangible force which will move a whole group of men [soldiers] to give their last ounce to achieve something, without counting the cost to themselves; that makes them feel they are part of something greater than themselves. If they are to feel that, their morale must, if it is to endure -- and the essence of morale is that it should endure -- have certain foundations. These foundations are spiritual, intellectual, and material, and that is the order of importance. Spiritual first, because only spiritual foundations can stand real strain. Next intellectual, because men are swayed by reason as well as feeling. Material last -- important, but last -- because the very highest kinds of morale are often met when material conditions are lowest.⁶⁶

Effective leadership develops and nurtures a cohesive bond in good military units. This bond becomes a force enabler for all operations. The principle of morale should reflect

the universal nature of the benefits associated with it. Adding this principle appears to correct a neglected imperative of U.S. military doctrine for the conduct of war and military operations. Emphasis in today's army on emerging technologies may degrade future commanders' awareness of the morale factors in military operations. The subtle reminder provided by this important element of military effectiveness is ample reason for including morale.

-Exploitation: The final recommendation of this paper is to not include the principle of exploitation. Although, enhancements in today's technology may improve the capability for successful exploitation operations, the evidence for including it as a principle of *operations* is limited. Exploitation as it exists in U.S. Army doctrine is a type of offensive operation. Commanders' consideration for executing exploitation operations are described in the current FM 100-5 *Operations*, FM 100-15 *Corps Operations* and FM 71-100 *Division Operations*.

If, exploitation is adopted by the Army as a principle of *operations*, then the following recommendations apply:

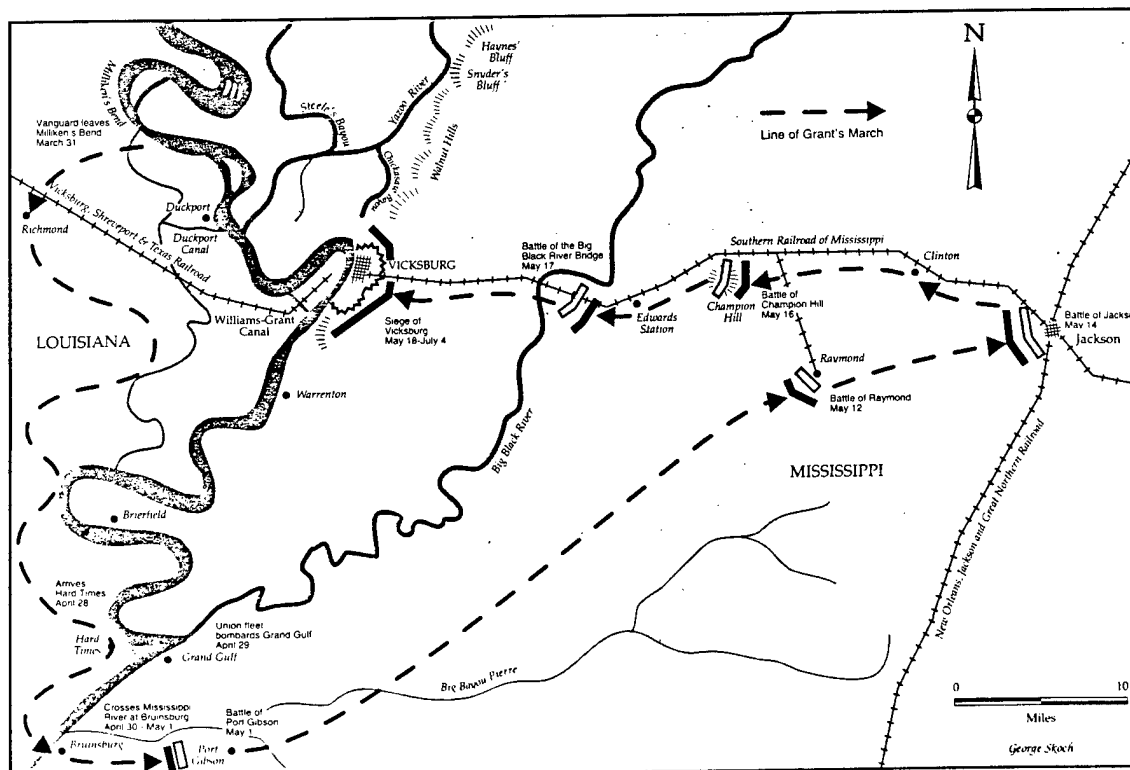
-Re-write the principle oriented towards both war and OOTW. Successes occur in OOTW and opportunities presented by them should be seized. Exposed enemy vulnerabilities in any operation should be considered for possible exploitation.

-To make the principle more universally appropriate, change the one sentence definition to read, "successful operations," vice "battlefield successes." In the range of potential operations a battlefield does not always exist. The area of operations or the commander's battle space may include non-combat aspects.

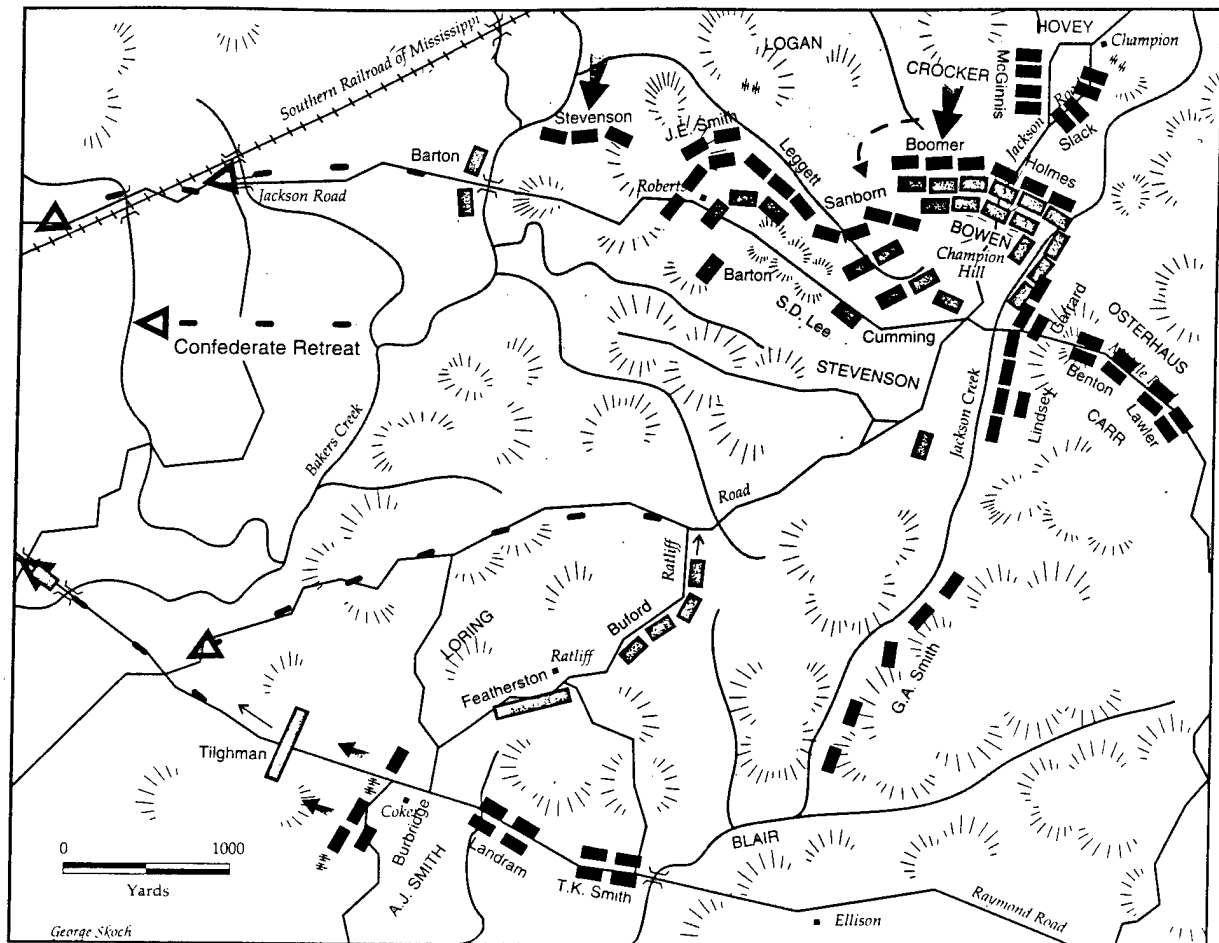
Comparison of the U.S. Army's proposed principles of *operations* and joint principles of war reveals that the Army conforms and improves upon the higher joint doctrine. The incorporation of the basic nine principles of war and the addition of morale, similar to the U.S. Air Force's addition of cohesion, capitalizes on the precedence set by that Service.

In light of the fact that Joint doctrine is still emerging and the Army has the oldest tradition of doctrine development, the revised principles of *operations* provide a viable example for all to follow. Maintaining a common body of doctrine throughout the Department of Defense (DOD) is necessary and important for effective future Joint operations. As the Army conducts routine doctrine revisions, staying abreast with the evolving nature of warfare continues to challenge and change the principles on which doctrine rests. On the eve of the next century, the newly published principles of *operations* will provide the flexible framework for thought required to address those challenges.

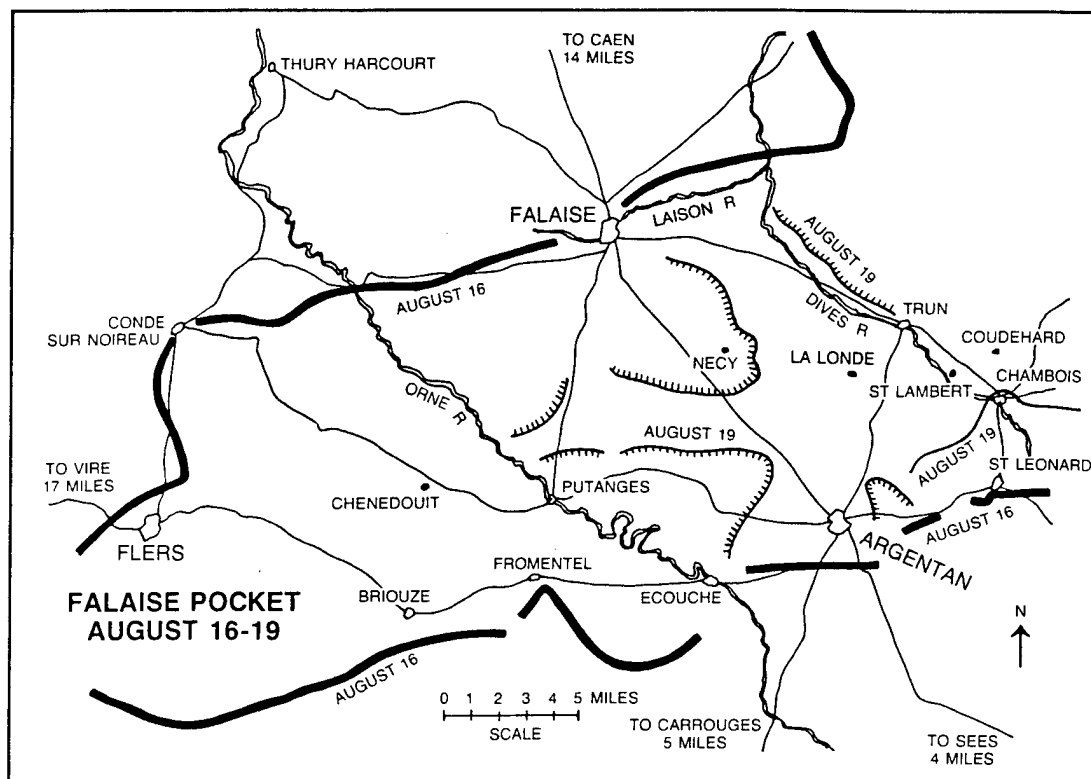
Appendix A, Enclosure 1 (Grant's Final Campaign Against Vicksburg, map by George Skoch, *The Campaign For Vicksburg - Civil War Series*, Eastern National Park and Monument Association, 1996, 14).



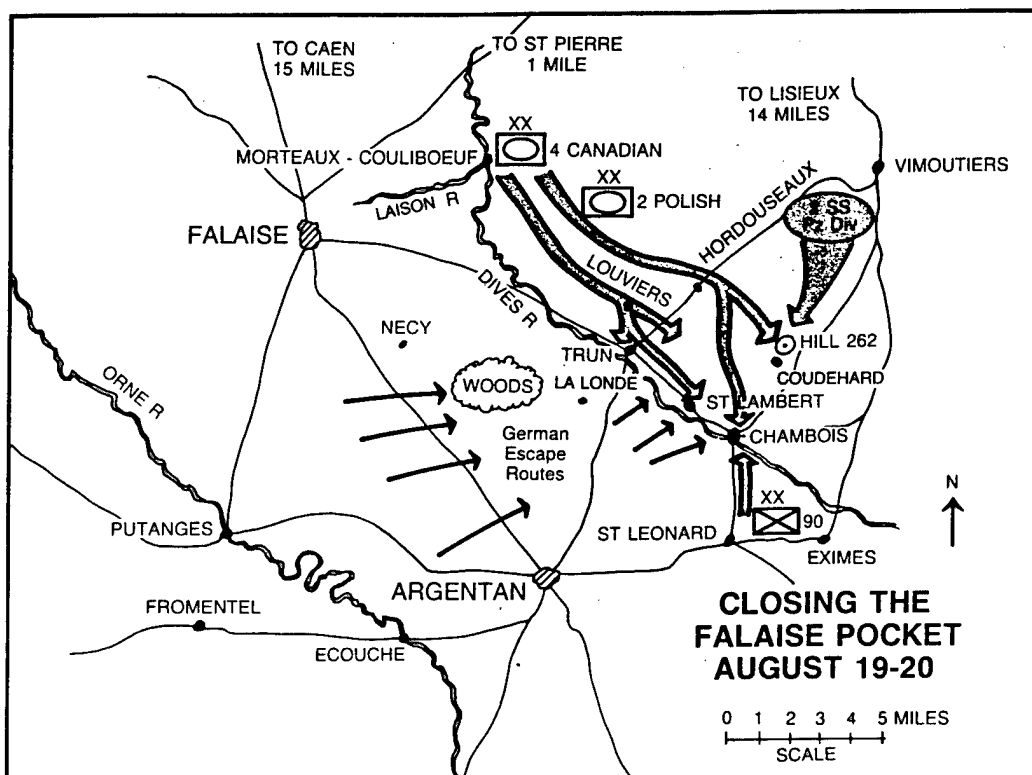
Appendix A, Enclosure 2 (Battle Of Champion Hill, map by George Skoch, *The Campaign For Vicksburg - Civil War Series*, Eastern National Park and Monument Association, 1996, 41).



Appendix A, Enclosure 3 (Falaise Pocket, August 16-19, Robert A. Miller, *August 1944*, Novato, CA: Presidio Press, 1988, 153).



Appendix A, Enclosure 4 (Closing The Falaise Pocket, August 19-20, Robert A. Miller, *August 1944*, Novato, CA: Presidio Press, 1988, 166).



15).



ENDNOTES

1. U.S. Army, *Field Manual 100-5, Operations*, (Washington D.C., June 1993), v.
2. *Webster's New Collegiate Dictionary* (1985), 9th ed., s.v. "scientific method."
3. John D. Keegan, "On The Principles Of War," *Military Review*, Vol.XLI, No. 12, December 1961, 72.
4. Carl von Clausewitz, *On War*, edited and translated by Michael Howard and Peter Paret (New Jersey, 1976), 152.
5. Alba B. Lathrop, "Principles of War in a Nuclear age," *Military Review*, Vol. XXXIX, No. 3, June 1959, 21.
6. *Ibid*, 68.
7. J.F.C. Fuller, *The conduct of war, 1789-1961: a study of the impact of the French, industrial, and Russian Revolutions on war and its conduct*. (New York, 1961), 48.
Original source: Cited by Colonel Vachee in *Napoleon at Work* (English translation 1914), 7. Once he said in the hearing at Saint-Cyr: "If one day I can find the time, I will write a book in which I will describe the principles of war in so precise a manner that they will be at the disposal of all soldiers, so that war can be learnt as easily as a science."
8. Robert M. Epstein, "The Napoleonic Wars," from a lecture delivered on 26 February, 1997 to the U.S. Army Command and General Staff College, School of Advanced Military Studies, Fort Leavenworth, Kansas.
9. John D. Keegan, "On The Principles Of War," *Military Review*, Vol.XLI, No. 12, December 1961, 61.
10. *Ibid*, 62.
11. Baron Antoine Henri Jomini, *Summary of the Art of War*, J.D. Hittle, trans. and ed. In *Roots of Strategy*, Book 2 (Harrisburg, PA, 1987), 461.
12. Carl von Clausewitz, *On War*, edited and translated by Michael Howard and Peter Paret (New Jersey, 1976), 617-618.
13. Bernard Brodie, *The Worth of Principles Of War*, from a lecture delivered on 7 March 1957 to the U.S. Army Command and General Staff College, Fort Leavenworth, Kansas.
14. Bernard Brodie, *Strategy in the Missile Age*, (New Jersey, 1959), 23.

15. John I. Alger, *The Quest for Victory*, (Westport, CN, 1982), 138-139. The complete history of the U.S. Army's development process for the principles of war is summarized in this book, 97-145.
16. Ibid.
17. Ibid, 124.
18. Ibid, 232-233, appendix 32.
19. Ibid, 136-137.
20. U.S. Army, *Field Manual 100-5, Field Service Regulations -- Operations*, (Washington D.C., 1949), 21-23.
21. Ibid.
22. U.S. Army, *Field Manual 100-5, Operations*, (Washington D.C., June 1993), 2-4.
23. U.S. Army, *Field Manual 100-5, Field Service Regulations -- Operations*, (Washington D.C., 1949), 21-23.
24. U.S. Army, *Field Manual 100-5, Operations -Coordinating Draft*, (Fort Leavenworth KS, 14 January 1997), II-2-1.
25. Ibid, II-2-8.
26. William E. DePuy, "Concepts of Operations: The Heart of Command, The Tool of Doctrine," *Army*, Vol. 38, No. 8, August 1988, 30.
27. Ibid, 31.
28. U.S. Army, *Field Manual 100-5, Operations -Coordinating Draft*, (Fort Leavenworth KS, 14 January 1997), II-2-8.
29. *Webster's New Collegiate Dictionary* (1985), 9th ed., s.v. "morale."
30. Carl von Clausewitz, *On War*, edited and translated by Michael Howard and Peter Paret (New Jersey, 1976), 186.
31. Ibid, 189.
32. Michael B. Ballard, *The Campaign for Vicksburg - Civil War Series*, (Eastern National Park and Monument Association, 1996), 42. During the battle at Champion Hill, Pemberton had on hand 23,000 to Grant's 32,000 (General Sherman arrived too late

to participate in the fight). Confederate losses totaled 3,800 while Grant counted about 2,400 casualties.

33. Ibid.

34. Robert A. Miller, *August 1944*, (California, 1988), 176.

35. Ibid, 176. Miller points out that most of the corps and division commanders escaped. Thomas B. Buell, et al, *The West Point Military History Series, The Second World War, Europe and the Mediterranean*, Thomas E. Griess, series editor, New Jersey, 1984, 338. The overall field commander, General Hausser, escapes with the other commanders.

36. Ibid.

37. Carlo D'Este, *Decision in Normandy*, (New York, 1983), 430. Thomas B. Buell, et al, *The West Point Military History Series, The Second World War, Europe and the Mediterranean*, Thomas E. Griess, series editor, New Jersey, 1984, 336. These authors describe the disposition of both Patton and Montgomery's armies during the time of the operation. The thoughts of both commander's about General Bradley's decisions are documented on pages 336 and 337. Robert A. Miller, *August 1944*, (California, 1988), 176. Miller, also discusses the debate and the consequences of Bradley's decisions.

38. U.S. Army, FM 101-5-1 (Final Draft) *Operational Terms and Graphics*, (Washington DC, 1995), 1-114.

39. U.S. Army, *Field Manual 100-5, Operations -Coordinating Draft*, (Fort Leavenworth KS, 14 January 1997), II-2-7.

40. U.S. Army, *Field Manual 100-15, Corps Operations*, (Washington DC, 13 September, 1989), 5-6.

41. U.S. Army, *Field Manual 100-5, Operations*, (Washington D.C., June 1993), 7-9.

42. William J. Slim, *Defeat into victory*, (London, 1972), 551. Un-named Sergeant-Major, Field Marshall Slim refers to in relating his experiences while fighting in Burma.

43. Ibid, 13-4.

44. Ibid.

45. Carl von Clausewitz, *On War*, edited and translated by Michael Howard and Peter Paret (New Jersey, 1976), 80.

46. Harry W. Pfanz, *The Battle Of Gettysburg Civil War Series*, (Eastern National Park and Monument Association, 1994), 12. The statement that the unit fought on successfully is paraphrased from the fact that “the Union forces had won the opening round at Gettysburg,” as stated by Pfanz in the historical account.
47. U.S. Army, *Field Manual 100-5, Operations*, (Washington D.C., June 1993), 13-4.
48. U.S. Army, *Field Manual 100-23, Peace Operations*, (Washington D.C., December 1994), 17.
49. Rick Atkinson, “The Raid That Went Wrong: How An Elite U.S. Force Failed in Somalia,” *Washington Post*, January 30, 1994, A1.
50. Herbert R. Tiede, “Principles of War,” *Marine Corps Gazette*, Vol. 79, No. 4, April 1995, 55.
51. U.S. Marine Corps, *FMFM I Warfighting*, (Washington D.C., March 1989), 30-37.
52. Ibid, 31.
53. Carl von Clausewitz, *On War*, edited and translated by Michael Howard and Peter Paret (New Jersey, 1976), 617-618.
54. James H Mueller, *Developing a Foundation for Space Doctrine: Do all the Principles of War apply to Military Space Operations?* (Fort Leavenworth, KS: US Army Command and General Staff College, 1989), 84. Original source: U.S. Air Force, *U.S. Air Force Manual 1-1, Basic Doctrine of the United States Air Force*, (Washington D.C.: Department of the Air Force, 1984.)
55. George H. Decker, speech given at the U.S. Army Command and General Staff College, Fort Leavenworth, Kansas, 16 December 1960, quoted in Joint Pub 1, *Joint Warfare of the US Armed Forces*, (Washington D.C., November 1991), 5.
56. U.S. Army, *Field Manual 100-5, Operations -Coordinating Draft*, (Fort Leavenworth KS, 14 January 1997), II-2-1.
57. William T. Johnsen, et al., *The Principles of War in the 21st Century: Strategic Considerations*, Carlisle Barracks, PA: U.S. Army War College, 1995.
58. John M. Collins, “Principles Of Deterrence,” *Air University Review*, Vol. XXXI, No.1, November-December 1979, 17-26.

59. Owen E. Jensen, "Information Warfare: Principles Of Third-Wave War," *AirPower Journal*, Vol. VIII, No.4, Winter 1994, 35-43.
60. Herbert R. Tiede, "Principles Of War," *Marine Corps Gazette*, Vol. 79, No.4, April 1995, 54-56.
61. Ibid.
62. Harry G. Summers, Jr., "Principles of War and Low-Intensity Conflict," *Military Review*, Vol. LXV, No. 3, March 1985, 43-49. William C. Bennett, "Just Cause and the Principles of War," *Military Review*, Vol. LXXI, No. 3, March 1991, 2-13. These two authors discuss the applicability of the principles of war in low-intensity conflict. Emory R. Helton, "Humanitarian Assistance - A Good Way To Lead The World," (Newport, R.I.: US Naval War College, 1993), 20-30. Helton applies the principles of war to the humanitarian assistance operation conducted during PROVIDE COMFORT in northern Iraq, with Kurdish refugees.
63. Harry G. Summers, Jr., *On Strategy: The Vietnam War In Context*, (Carlisle Barracks, PA., 23 March, 1982), 1.
64. U.S. Army, *Field Manual 100-5, Operations*, (Washington D.C., June 1993), 7-9.
65. Huba WASS de CZEGE, "Understanding and Developing Combat Power," unpublished paper written in 1984. BG (Ret.) Huba WASS de CZEGE was the first director of the School of Advanced Military Studies and a prominent figure in AirLand Battle doctrine development.
66. William J. Slim, *Defeat into victory*, (London, 1972), 182.

BIBLIOGRAPHY

Books:

- John I. Alger. *Definitions and Doctrine of the Military Art*. Wayne, NJ: Avery, 1985.
- John I. Alger. *The Quest for Victory: The History of the Principles of War*. Westport, CT: Greenwood, 1982.
- Michael B. Ballard. *The Campaign For Vicksburg - Civil War Series*. Eastern National Park and Monument Association, 1996.
- James Blackwell. *Thunder in the desert: the strategy and tactics of the Persian Gulf War*. New York, NY: Bantam, 1991.
- Daniel P. Bolger. *Savage peace: Americans at war in the 1990s*. Novato, CA: Presidio, 1995.
- Bernard Brodie. *Strategy in the Missile Age*. Princeton, NJ: Princeton University Press, 1959.
- David G. Chandler. *Campaigns of Napoleon*. New York, NY: MacMillian Publishing Co., 1966.
- Carl Von Clausewitz. *On War*. Edited and Translated by Michael Howard and Peter Paret. Princeton, NJ: Princeton University Press, 1976.
- Thomas B. Buell, Clifton R. Franks, John A Hixon, David R. Mets, Bruce R. Pirnie, James F. Ransone, Jr., Thomas R. Stone. *The West Point Military History Series, The Second World War, Europe and the Mediterranean*. Thomas E. Griess, series editor. Wayne, New Jersey: Avery Publishing Group Inc., 1984.
- Carlo D'Este. *Decision in Normandy*. New York, NY: E.P. Dutton, Inc., 1983.
- John T. Fishel. *Liberation, Occupation, and Rescue: War Termination and Desert Storm*. Carlisle, PA: Strategic Studies Institute, 1992.
- J.F.C. Fuller. *The Foundations of the Science of War*. Fort Leavenworth, KS: U.S. Army Command and General Staff College Press, 1993.
- Antoine Henri Jomini. *Jomini's Art of War*. Edited by J.D. Hittle, In *Roots of Strategy, Book 2*, Harrisburg, PA: Stackpole Books, 1987.
- Robert A. Miller. *August 1944*. Novato, CA: Presidio Press, 1988.

Harry W. Pfanz. *The Battle of Gettysburg Civil War Series*. Eastern National Park and Monument Association, 1994.

William J. Slim. *Defeat into victory*. London, England: Cassell & Company Limited, 1956.

Harry G. Summers. *On Strategy: A Critical Analysis of the Vietnam War*. NY: Dell, 1982.

Harry G. Summers. *On Strategy: The Vietnam War In Context*. Carlisle Barracks, PA: Strategic Studies Institute, U.S. Army War College, 1982.

Dennis J. Quinn. *Peace Support Operations and the U.S. Military*. Washington, DC: National Defense University Press, 1994.

Charles Andrew Willoughby. *Maneuver in War*. Harrisburg, PA: The Military Service Publishing Co., 1939.

Articles:

F.B Ali. "The Principles of War." *The Journal of the United Service Institution* 108 (May 1963): 159-65.

Rick Atkinson. "The Raid That Went Wrong: How An Elite U.S. Force Failed in Somalia." *Washington Post* (January 30, 1994): A1.

Avraham Ayalon. "Advantages and Limitations of the Principles of War." *Military Review* 67 (July 1987): 40-45.

Roger A. Beaumont. "The Principles of War Revisited." *Military Review* 52 (December 1972): 63-69.

William C. Bennett. "Just Cause and the Principles of War." *Military Review* 71 (March 1991): 2-13.

John. M. Colleens "Principles of Deterrence." *Air University Review* 31 (November-December 1979): 17-26.

R.L. Conolly. "The Principles of War." *Military Review* 33 (May 1953): 22-32.

William E. DePuy, "Concepts of Operation: The Heart of Command, the Tool of Doctrine." *Army* 38 (August 1988):26-40.

W.D. Disbrey. "The Application of the Principles of War to Air Power." Digested in *Military Review* 31 (November 1951): 81-85.

- Dennis M. Drew. "A Matter of Principles." *Air University Review* 36 (January-February 1985): 24-29.
- Emil V.B. Edmond. "The First Principle of War." *Military Review* 41 (February 1961): 12-15.
- A.R.P. Ernle-Erle-Drax. "Principles of War." *The Journal of the Royal United Service Institution* 107 (February 1962): 65-67.
- Marshall L. Fallwell. "The Principles of War and the Solution of Military Problems." *Military Review* 35 (May 1955): 48-62.
- George M. Hall. "A Field Expedient for the Principles of War." *Military Review* 63 (March 1983): 34-42.
- Kenmin Ho. "Mao's 10 Principles of War." *Military Review* 47 (July 1967): 96-98.
- Owen E. Jensen. "Information Warfare: Principles of Third-Wave War." *Airpower* 8 (Winter 1994): 35-34.
- Paul Katz. "The Additional Principle of War." *Military Review* 36 (June 1987): 36-45.
- John D. Keegan. "On the Principles of War." *Military Review* 41 (December 1961): 61-72.
- Bruce Keener. "The Principles of War: A Thesis for Change." *U.S. Naval Institute Proceedings* 93 (November 1967): 26-36.
- Alba B. Lathrop. "Principles of War in a Nuclear Age." *Military Review* 39 (June 1959): 21-27.
- Gordon J. Lippman. "Jomini and the Principles of War." *Military Review* 38 (February 1959): 45-51.
- Guilhermino de Magalhaes. "The Principles of War and the Development of Means." Digested in *Military Review* 39 (February 1960): 97-101.
- Robert W. RisCassi. "Principles for Coalition Warfare." *Joint Force Quarterly* 1 (Summer 1993): 58-71.
- Harry G. Summers "Principles of War and Low-Intensity Conflict." *Military Review* 65 (March 1985): 43-49.
- Donn A. Starry. "The Principles of War." *Military Review* 61 (September 1981): 2-12.

Richard M. Swain. "On Bringing Back the Principles of War." *Military Review* 60 (November 1980): 40-46.

Herbert R. Tiede. "Principles of War." *Marine Corps Gazette* 79 (April 1995): 54-56.

J.N. Tomes. "The Principles Before War." Digested in *Military Review* 35 (June 1955): 89-91.

Thomas B. Vaughn. "Morale: The 10th Principle of War." *Military Review* 63 (May 1983): 23-39.

Josiah A. Wallace. "The Principles of War in Counterinsurgency." *Military Review* 46 (December 1966): 72-81.

S.J. Watson. "A Comparison of the Russian, American and British Field Armies." *The Army Quarterly* 60 (April 1950): 33-50

Herbert E. Wolff. "9 + 1 = 10." *Infantry* 55 (March-April): 30-33.

Reports, Theses, and Translations:

John Irvin Alger. "The Origins and Adaptation of the Principles of War." Unpublished thesis, Command and General Staff College, 1975.

Stanley E. Griffith. "Principles of War." Prepared by the Naval War College, June 17, 1988.

Emory R. Helton. "Humanitarian Assistance - A Good Way to Lead the World." Prepared by the Naval War College, February 22, 1993.

William T. Johnsen, Douglas V. Johnson II, James O. Kievit, Douglas C. Lovelace, Jr., Steven Metz. "The Principles of War in the 21st Century: Strategic Considerations." U.S. Army War College, August 1, 1995.

Edward S. Johnston. "Principles of War: The American Genesis." Reprint of 1934 *Command and General Staff School Quarterly* 14 (June 1934) with commentary by Harry G. Summers and Wallace P. Franz. Prepared by the Strategic Studies Institute, Carlisle, PA, February 20, 1981.

James H. Mueller. "Developing a Foundation for Space Doctrine: Do All the Principles of War Apply to Military Space Operations?" Unpublished thesis, Command and General Staff College, 1989.

"Principles of War: A Translation from the Japanese." Trans by Joseph West, Combat Studies Institute, U.S. Army Command and General Staff College., January 1969.

John O. Shoemaker. "The Principles of War: Sense or Nonsense in the Cold War?"
Prepared by the U.S. Army War College, April 22, 1966.

Manuals

Joint Pub 3-0, *Doctrine for Joint Operations*. Washington D.C.: Joint Chiefs of Staff, 1995.

Joint Pub 3-07, *Joint Military Operations Other than War*. Washington D.C.: Joint Chiefs of Staff, 1994.

U.S. Army. Field Manual 71-100, *Division Operations* (Final Draft). Washington D.C.: US Government Printing Office, undated.

U.S. Army. Field Manual 100-5, *Field Service Regulations - Operations*. Washington D.C.: US Government Printing Office, 1949.

U.S. Army. Field Manual 100-5, *Operations*. Washington D.C.: HQ Department of the Army, 1993.

U.S. Army. Field Manual 100-5, *Operations*, Coordinating Draft, 14 January 1997. Fort Leavenworth KS: Command and General Staff College, 1997.

U.S. Army. Field Manual 100-7, *Decisive Force: The Army in Theater Operations*. Washington D.C.: HQ Department of the Army, 1995.

U.S. Army. Field Manual 101-5-1 (Final Draft), *Operational Terms and Graphics*. Washington D.C.: US Government Printing Office, 1995.

U.S. Army. Field Manual 100-15, *Corps Operations*. Washington D.C.: HQ Department of the Army, 1989.

U.S. Army. Field Manual 100-23, *Peace Operations*. Washington, D.C.: HQ Department of the Army, 1994.

U.S. Marine Corps. FMFM 1, *Warfighting*. Washington, D.C.: HQ Department of the Navy, 1989.

Lectures

Bernard Brodie, *The Worth of Principles of War*. From a lecture delivered on 7 March 1957 to the U.S. Army Command and General Staff College, Fort Leavenworth, Kansas.